

All Scale Rails

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2015



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Editorial

What is the first image that comes into your head when you hear the word: Train? Now see, this is where it gets interesting. A voice speaks up, "My first Lionel set I got when I was 6." Another voice calls out, "No! It's a perfect shot of the Southern Pacific #4449." Yet another wistful voice says, "Riding the Acela to New York for the day."

Contrary to some popular theories, it is okay to have different interests within the same subject matter. I have been known to submerge myself in my model railroad as well as stand trackside in the dead of winter for that perfect shot of an Amtrak locomotive plowing through a large drift of snow. Some days are meant for holing up in the basement surrounded by the scents of paint and artificial steam and others are meant for road trips in cramped quarters chasing a big steam locomotive across the country.

We all have something to learn, whether we know it or not (I know, I know, it's hard to believe!) Our motto here at *All Scale Rails* is "To Preserve and Inspire" and we hold true to that saying. We want to be the reason your spouse is angry that you bought yet another engine or that you joined a historical club in your area to support the preservation of a piece of history. Go ahead, blame us when you visit the grand-kids and step on pieces of rail strewn about their bedroom or basement. We will wear it as a badge of honor!

Whatever your tastes, we are hoping to satisfy your interests in the form of articles, photos, and up-to-date social media releases pertaining to all things trains. We appreciate any and all suggestions and feedback. This magazine is not just about massive fire breathing steam locomotives or how to change the couplers on your gondola; it's also about the people that preserve the his-

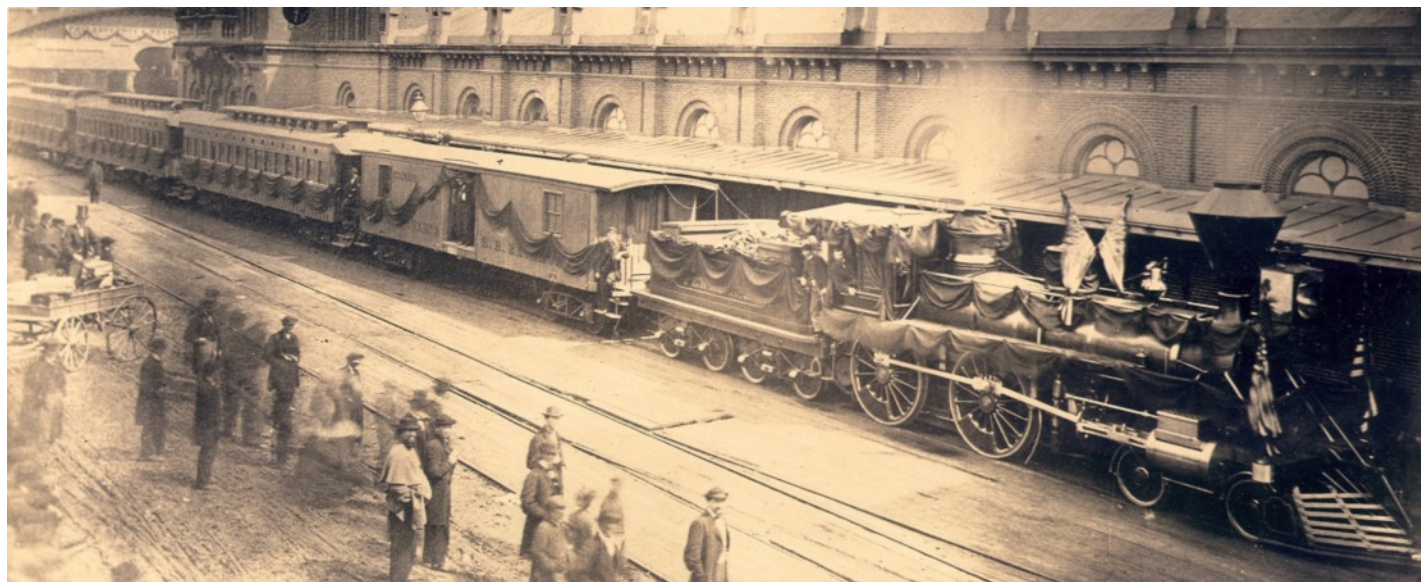
tory of industry and those at work within it.

Enough talk already-go check us out. Embrace the Engineer within you, unless, of course, today you are the Fireman. It's all up to you.

---Bonnie

The Lincoln Special

By Bonnie Domrois



Pennsylvania Railroad
Unknown Photographer

On April 14th, 1865, the lives of millions came to a screeching halt as news spread like wildfire of the assassination of President Abraham Lincoln. His body would travel home to Springfield, Illinois in a magnificent train car built specifically for the President and his Cabinet. The body of his son, Willie, who died from typhoid fever in 1862 at age 11, would also travel back to Illinois in the same car. Lincoln himself never had the opportunity to ride in it while he was alive. He thought it was a waste of taxpayer money and was too expensive for a public servant such as himself.

The train consist was that of nine cars, including a baggage car and the hearse car. The hearse car, named the United States, was built to be the "Air Force One" of its time and included a parlor, sitting room, and sleeping apartment. The other eight cars were provided by the railways over which the President's

body was transported. Sometimes there would be more baggage cars, other times more parlor cars, the railroads were to switch them according to what the needs of the passengers were between individual stops. No one knows for certain, but it is estimated that at least 42 locomotives were used over the course of the trip and one always went ahead of the funeral train to ensure that the track was clear. In addition, the train never moved faster than 20 miles an hour to avoid the chance of any accidents occurring while the President was on board.

Thousands of people lined the route that the President's body would take, bowing heads in respect, averting tear filled eyes, while bands played in rail stations and volunteers picked flowers to be displayed in his honor. Ironically, the first president assassinated was also an incredibly popular one. Dubbed "The Lincoln Special" the train would

pass through 180 large cities and small towns on its route from Washington D.C. to Springfield, Illinois, backtracking the route Lincoln took as President Elect on his way to his first Inauguration. Specific cities were chosen along the route to display the President's body for the public.

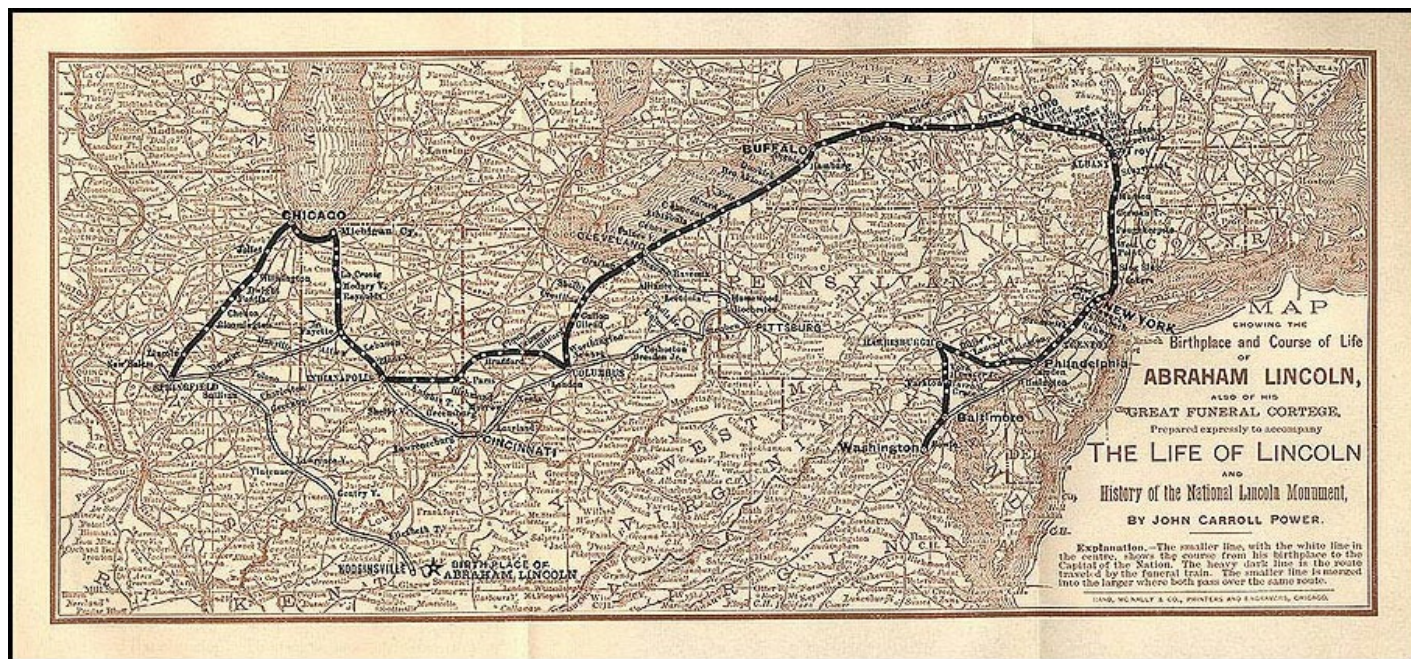


Buffalo's St. James Hall 1865
Unknown Photographer

The funeral train was granted executive right to the rails above all other forms of commercial or passenger service. Each engine

was shrouded in funeral attire as was the funeral car itself. Bells tolled solemnly and music played in time with the weeping, devastated public. Once it arrived at one of the designated stops, the coffin was carefully placed in an extravagantly decorated hearse drawn by four black horses and transported to a public place where thousands of people came and paid their respects. In Philadelphia the coffin was laid out in Independence Hall, where the Declaration of Independence was signed. Some visitors claimed to have waited over five hours to view the body and had to be treated for exhaustion.

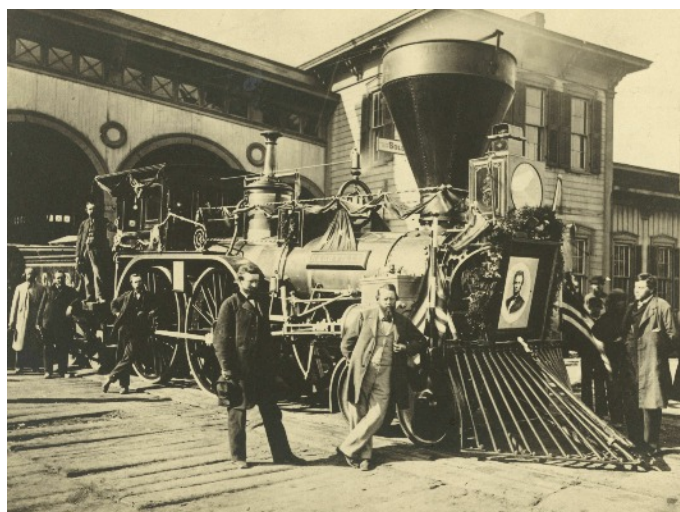
Despite the extensive military presence and strict schedule imposed by the Department of War, tens of thousands of mourners poured into each city and town along the way. Crowds gathered everywhere and included people of all races and social status dressed in mourning for the death of their beloved President.





Lincoln Funeral Train Passing Mourners 1865
Oil painting on canvas

Painting by Robert L. Hunt
<http://robertlhunt.photoshelter.com>



Nashville locomotive
Unknown Photographer

The President's portrait was fixed to the front of the locomotive, just above the cattle guard. His entourage consisted of over 300 people including his eldest son, Robert, who rode the train part of the way, then returned to the White House and took another train back to Springfield to attend the burial of his father and brother. Too distraught to travel beside her deceased husband and son, Mrs. Lincoln would go home to Illinois a month later.

After the burial of President Lincoln, the funeral car was purchased by Union Pacific Railroad and used as an executive car for many years. Afterwards, the car changed hands multiple times before it's destruction in a prairie fire in 1911.



Alexandria, Virginia
United States Military Railroad
W. H. Whiton locomotive and funeral car
Unknown Photographer



Harrisburg Station 1865
Unknown Photographer

For its time, the Lincoln Funeral Train was the glue that bound our nation's grief together. It was a 1,654 mile long funeral procession that brought out farmers and socialites, men, women, children, people of all nationalities, creeds, and colors all at the end of a Civil War that had pitted brother against brother. The magnitude of the funeral procession, the details and organization were a gigantic feat for its day and would be hard pressed to be replicated today; all done by the public for a beloved President. *

Cities President Lincoln Laid In State:

Washington D.C.

April 18th, 1865

April 20th, 1865

Baltimore, Maryland

April 21st, 1865

Harrisburg, Pennsylvania

April 21st, 1865

Philadelphia, Pennsylvania

April 22nd, 1865

New York, New York

April 24th, 1865

Albany, New York

April 25th, 1865

Buffalo, New York

April 27th, 1865

Cleveland, Ohio

April 28th, 1865

Columbus, Ohio

April 29th, 1865

Indianapolis, Indiana

April 30th, 1865

Michigan City, Indiana

May 1st, 1865

Chicago, Illinois

May 1st, 1865

Springfield, Illinois

May 3rd, 1865

Sesquicentennial Replica

By: Bonnie Domrois

Photos courtesy of Dave Kloke

The assassination of President Lincoln and the pomp of his national funeral was the stuff legends are made of. For the 150th Anniversary of the death of the 16th President of the United States of America, thousands of towns and cities are preparing for large scale memorials and observances. For one man and an incredibly skilled group of volunteers, the past can once again come alive.



In 1999 Dave Kloke set out to see about purchasing a steam locomotive. After discovering that any surviving steam locomotives were owned by museums and not available for purchase he determined the only way he would be able to own one is if he built one himself. So construction began on a working replica of the Leviathan #63, a locomotive originally built in 1868 and sister to the Jupiter. The Jupiter was one of two locomotives that met at Promontory, Utah in 1869. After

10 years of dedicated hard work, the Leviathan was finished. So it was no real surprise when Kloke chose his next project: a replica of the Lincoln funeral train. Work began on the General's car, but due to financial and time restraints, the focus went to the hearse, or funeral, car. Every last piece of this car has been seen to with incredible attention to detail.

As the saying goes: the devil is in the details. Kloke and his volunteers went to great lengths to secure just the right accessories to outfit both the inside of the train as well as the outside. Two lanterns that served the original funeral car are on loan for the event. Period chairs found on Craigslist were generously donated to the project to be displayed in the funeral car. Family Heirloom Weavers out of Red Lion, PA is in charge of producing the authentic carpeting for the car. Having done the carpeting at the Lincoln Home in Springfield, IL, the fit was just right for this project.





One of the bigger obstacles was to determine the original color of the car. All photos were in black and white and no real documentation was found to determine the exact shade the car had been painted. As luck would have it, a piece of the windowsill was found that had survived the fire of 1911. With the help of Wayne Wesolowski, a chemistry professor at the University of Arizona, the original composition of the paint used was discovered and replicated for the funeral car.

Kloke has tried to keep the recreation of this car as close to the original as possible with the exception of the wheels as they had to be retro fitted to comply with Federal Railroad Administration specifications. In addition, the car-trucks were made out of steel instead of wood. Save for these few things, this car is about as close as it gets to the original.

The goal for the project was to create an authentic replica of the President's funeral car and have it travel, pulled at least part of the way, by the Leviathan to different cities along the original funeral train route. Due to modern day railroad traffic and lack of funding, the train will make scheduled stops on its way east from Springfield starting in mid-May and will be transported via semi-trailer.





The funeral train will debut on May 2nd & 3rd and is joining with the 2015 Lincoln Funeral Coalition in observance of the death of President Lincoln in a special event marked for that weekend. This event will include reenactors, period carriages, scholars, and dignitaries from all over the world. The Leviathan and the Funeral car will be on display for the public that weekend. *

Help Keep the 2015 Lincoln Funeral Train On Schedule!

Website:

www.The2015LincolnFuneralTrain.com

*Schedule of Events

*Donate

*See More Photos

Facebook:

www.facebook.com/2015LincolnFuneralTrain

*See the Progress

Boxcar Grain Door Panels

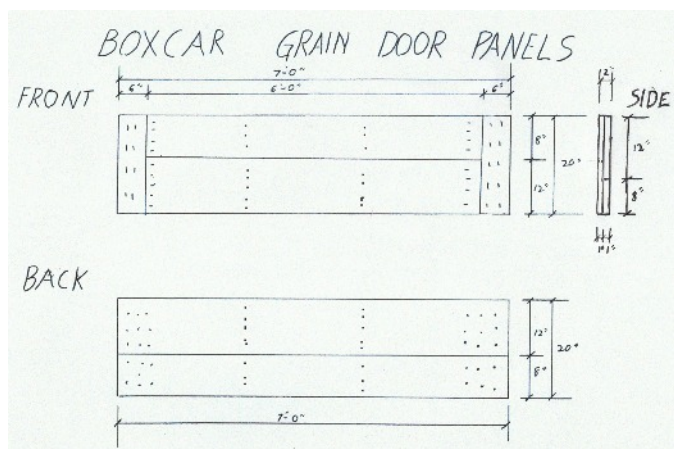
By Bonnie Domrois

Illustration By Kevin Domrois

Grain door panels are an often overlooked detail in the model railroading industry. Back in the early 20th century grain door panels were used to barricade the doors on boxcars to keep loose grain inside for transit. Grain door panels were made up of two boards, one wider than the other, laid horizontally, long side by long side. Two short boards were then nailed across the ends of these two boards vertically, one on either end of the boards. This section was then flipped and two more boards were nailed to this side; the wider one covering the gap between the first two boards and the narrower one nailed horizontally on top of the wider one. This setup was defined as a finished door panel. These would be made ahead of time and piled next to the rails or grain silos so they would be ready when the time came to use them.

The elevator worker would take these panels and a ladder and climb inside the boxcar. He would take one panel and nail it to the inside of the boxcar spanning the length of the open door. Another panel would be nailed horizontally above the first grain door panel and so on up the space of the boxcar door. This process would be repeated on the other side of the boxcar, covering the other door as well. When the opening was covered almost all the way up, the elevator worker would climb the ladder, straddle the grain door panels in the gap between the panels and the top of the boxcar, flip the ladder to the other side of the paneled door and use the ladder to climb down.

The grain would be loaded into the boxcar through the gap above the panels. A very select few boxcars were fitted with a hatch on the roof or at the top of the short side of the boxcar. The doors would then be closed and the fully loaded boxcar was ready for transit. Once the boxcar reached its destination, a push ram was used to push the panel loose or the bottom panel was broken out to allow the grain to flow out from the car. When the car was empty, the rest of the panels were removed for future use. In later years, paper grain door panels replaced the wood versions, but both were ultimately phased out by covered hoppers. *



Grain Era Authenticity

By Bonnie Domrois

Modeler: Kevin Domrois



With only a few tools that you may already have in your tool box, you can add this authentic detail to your layout. For this how-to we are using an N scale Micro Trains Line 40' boxcar and N scale laser etched wood boxcar grain door panels from Great Lakes Models. You are also going to need cyanoacrylate (CA glue), toothpicks, a sharp hobby knife, tweezers, and a wire cutter.



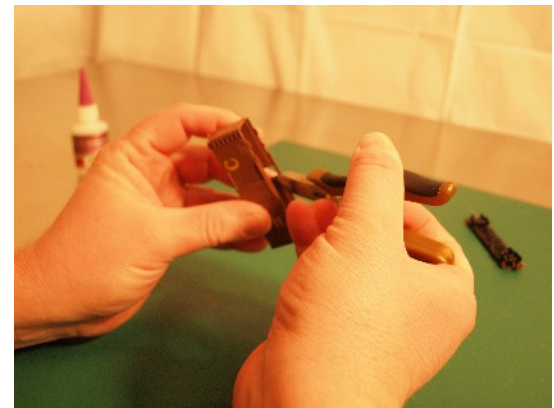
First, open the boxcar door so that you can see the top side of the chassis from the inside of the boxcar. Take the hobby knife and scratch a careful line where the top of the chassis meets the side of the boxcar under the door. This will serve as the marker for the bottom grain door panel.



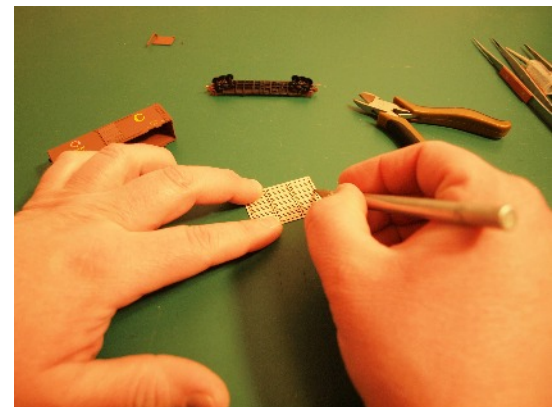
Turn the boxcar over so that the chassis faces up. Take your thumbs and place them on the sides of the underside of the chassis near the middle. Gently pull the sides of the boxcar away from the chassis. Place index fingers on the truck, push towards each other and pull towards you. This will separate the chassis from the body of the boxcar. Set chassis aside for the time being.



Slide the boxcar door to the half open, half closed position. Use the cutter to clip off the tab on the lower inside of the boxcar door. The door will then be loose and will fall out or come out with some maneuvering.



Using a sharp hobby knife, cut the grain door panels loose from the fret. Standard 40' boxcars traditionally used four or five grain door panels depending on the height and style of the boxcar.

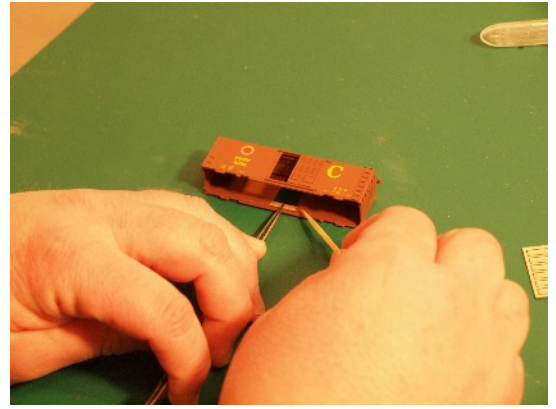


Take the hobby knife and scratch access fret or imperfections from the edges of the door panels.

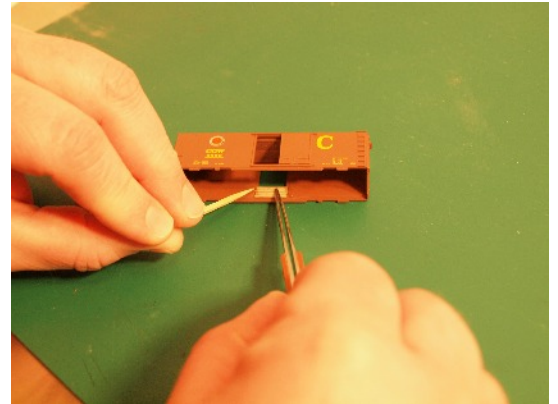


Picking up the first grain door panel with your tweezers, place it on the inside of the boxcar spanning the space of the open door and line up the bottom with the pre-scratched line from the chassis. When the grain door panel is lined up, use tweezers to hold it in place by pressing it firmly down to keep it from moving. Using your other hand, dip a toothpick in CA glue and dab lightly on each side of the grain door panel and the inside of the boxcar where they meet.

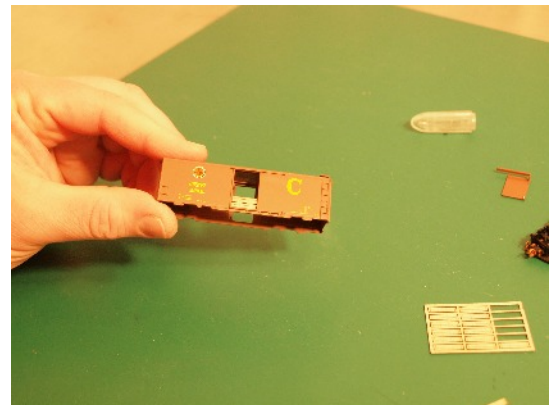
Securing the grain door panel with the tweezers prevents it from lifting away from the boxcar as you are trying to glue it.



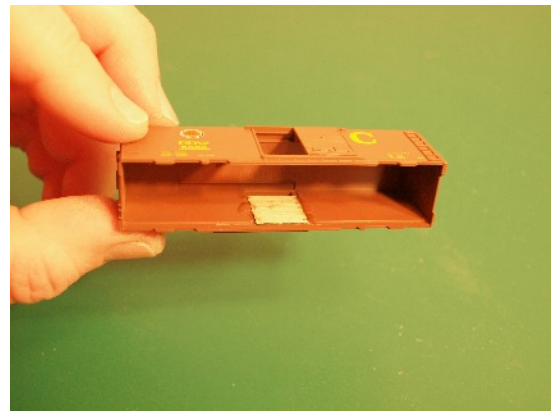
Let the glue dry before adding the next panel.



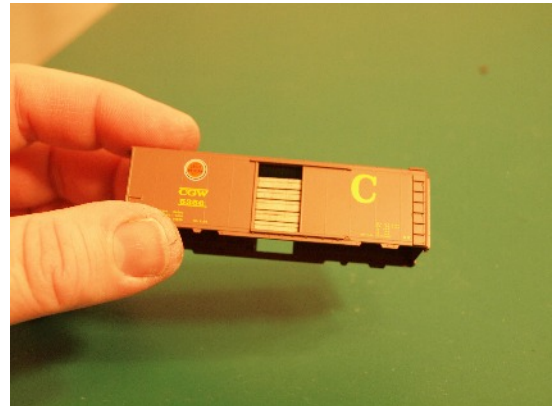
With the tweezers, take the second grain door panel and line it up next to the edge of the finished one and glue into place the same way as the first one.



Repeat this process until four or five grain door panels have been glued side by side across the open doorway of your boxcar. Let the glue dry.



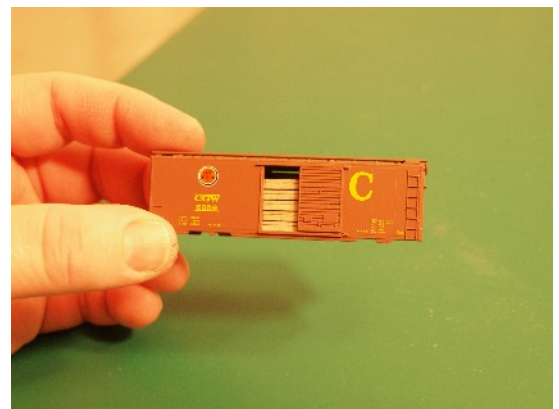
When the glue has had time to dry, take the boxcar door that had been removed and reinsert it back into the boxcar.



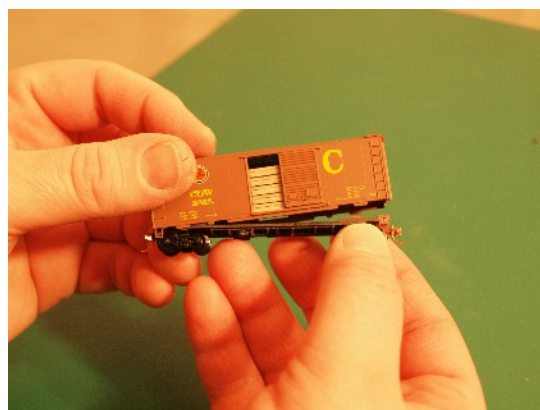
Keeping the boxcar door in the open position, use a toothpick to place a small dab of CA glue between the back of the door and the side of the boxcar.



Press the door against the side of the boxcar to secure the glue until it sets. Place a dab or two of the CA glue along the inner track of the boxcar door to make sure that the door does not come loose.



Prototypically both doors of the boxcar would have the grain door panels applied. When being filled, the boxcar doors would be open, however for transit they would be closed. For modeling purposes, you can choose to do either one side or both. Just remember, you will not be able to close your model doors once you glue them back into place after the grain panels are applied.



When all the grain door panels and the boxcar door are glued back in place, replace the chassis by firmly popping it back into place.



Train Shows

We don't list train shows in our publication as our sister site focuses on that aspect.

www.ModelTrainShows.com

Your A to Z listing of U.S. and Canadian train shows, swap meets, open houses, and conventions by state and date. As well as the "Model Train Clubs" button to get local club information!



All shows are listed by state and in chronological order.
Simply click on your state to view the events in your area.

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News & New Products

News

*In the first week of March 2015 U.S. Rep. Elizabeth Etsy wrote a rail safety bill co-sponsored by U.S. Rep. Jim Himes and 4 others that would allocate resources to upgrade lights and signals at railroad crossings, separate roads from railroad tracks, and increase the public's awareness of the dangers surrounding railroad crossings. In addition, the Federal Railroad Administration is asking local police departments to step up enforcement of rail safety at rail crossings.

*Plans are underway to renovate Detroit's Michigan Central Station, abandoned since 1988. Barbed-wire fencing to keep out vandals and scrappers have already been erected. What is the first order of business? Replacing over 1,000 broken and busted out windows in the 18 story behemoth.

O Scale

Bachmann

Denver & Rio Grande Western™ #42 -
Scale 44 Ton Switcher

MRSP: \$399.95

www.bachmanntrains.com/



S Scale

Monster Model Works

Single Story Starter Structure Kit
Dimensions: 6.0W" X 8.5L" X 4.5H"
MSRP: \$79.99

www.monstermodelworks.com



HO Scale

GC Laser

HO-SCALE CARBONDALE PASSENGER DEPOT (ICRR)



\$399.99

Kit includes: Pre-colored matboard brick exterior construction
Pre-colored matboard painted interior construction

Footprint: 25-1/2" x 7" x 4-1/4"

<http://www.gclaser.com>

N Scale

Atlas

B23-7 & B30-7 Locomotives



Standard MSRP: \$124.95

Decoder-Equipped MSRP: \$159.95

Estimated Delivery: 4th Quarter 2015

www.atlasrr.com

Z Scale

AMERICAN Z LINE

Milwaukee Road E9 A-B set. Each set contains 1x E9A unit and 1x E9B unit. Both units are powered.

MSRP:\$297.00

www.americanzline.com/



Full Throttle

Denver & Rio Grande Western 3 Bay 70 Ton hopper

MSRP: 46.00

<http://www.wdwfullthrottle.com/>



Blueprints

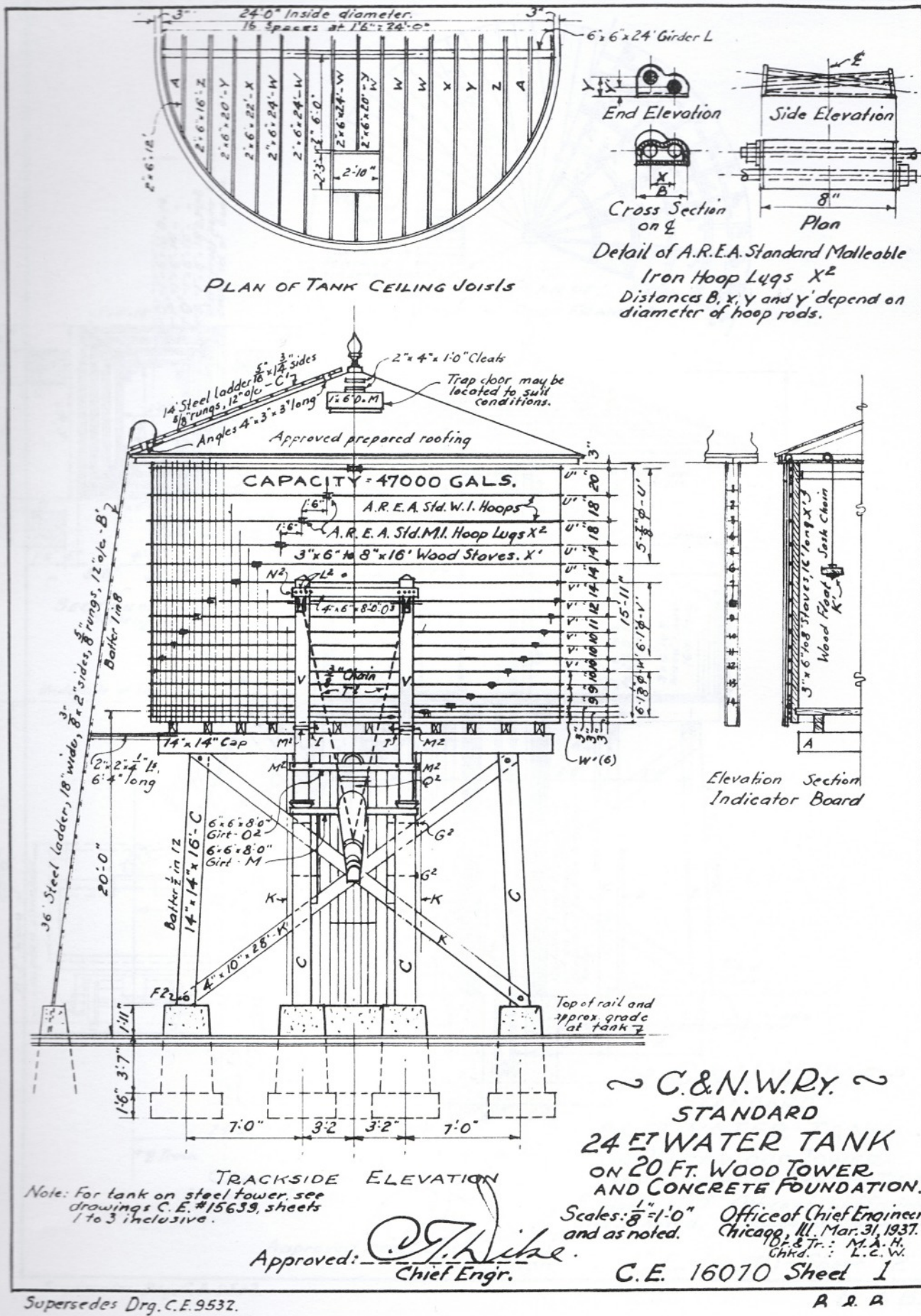
C&NW
1937
Standard
24Ft Water Tank
On 20Ft Wood Tower
And Concrete Foundation

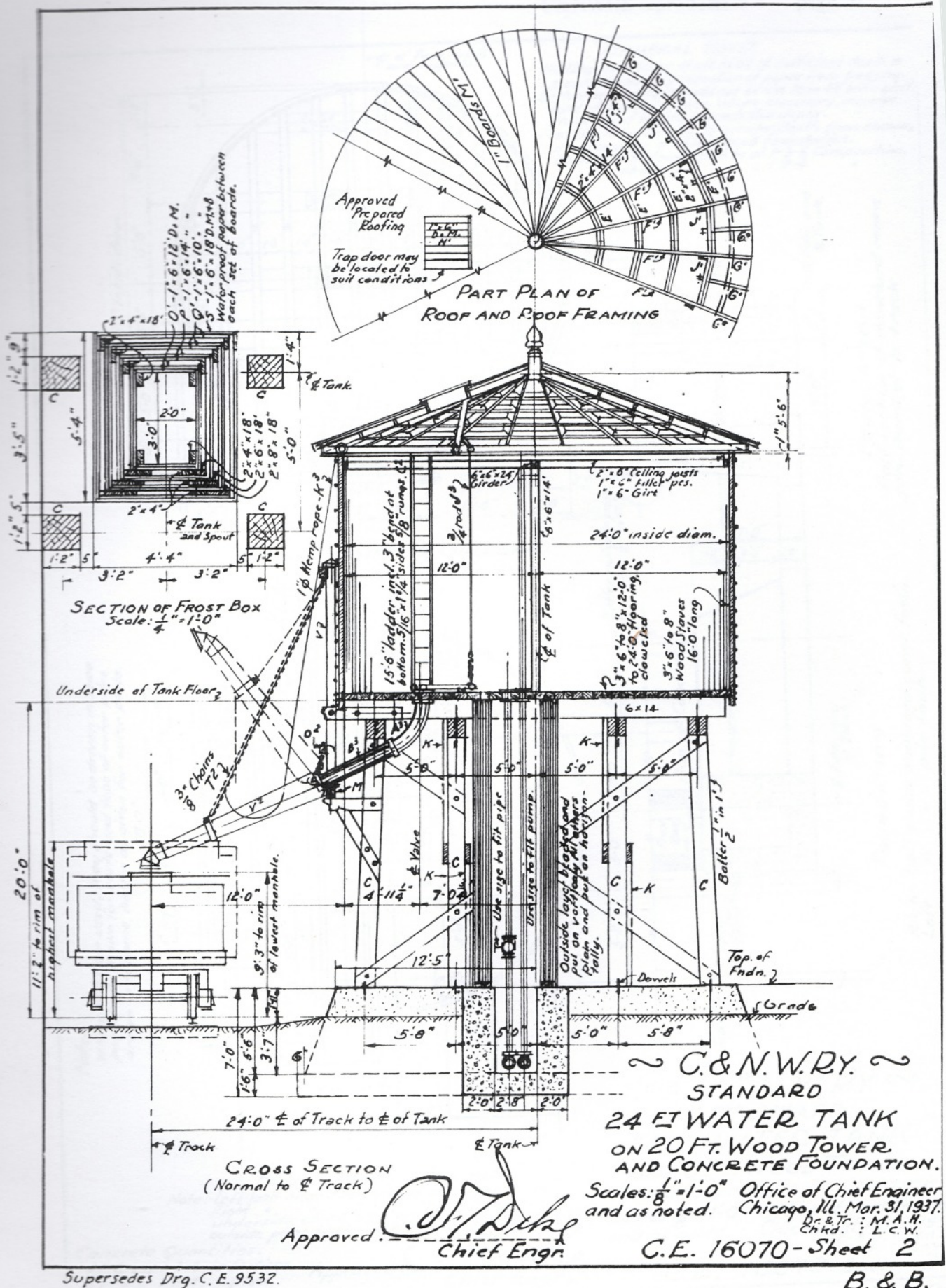
Sheet 1 Track Side Elevation
Sheet 2 Cross section normal to track
Sheet 3 Foundation Plans
Sheet 4 Spout and Spout support
Sheet 5 Bill of Material

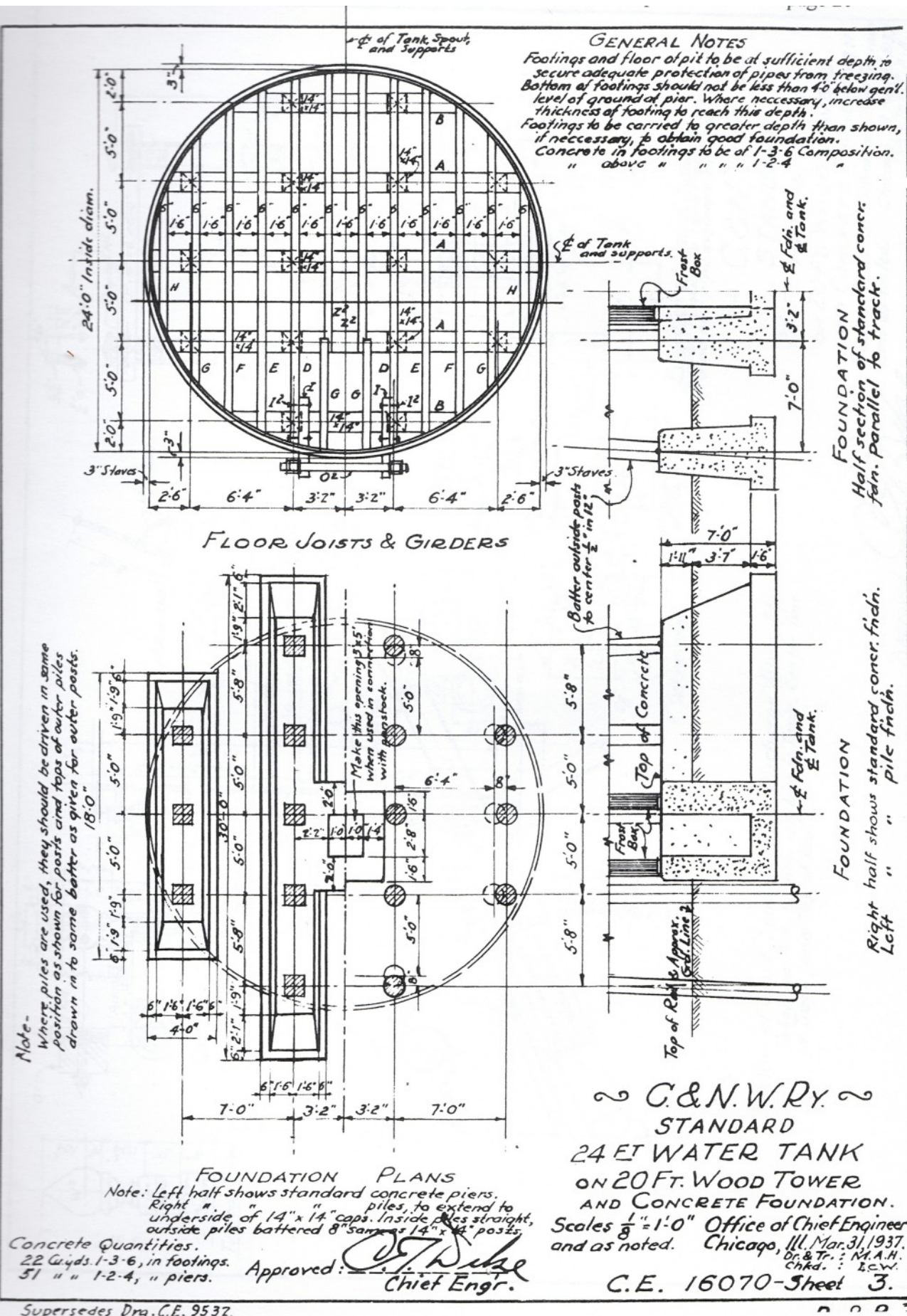
Plans courtesy of the
Chicago & North Western Historical Society
<http://www.cnwhs.org/>

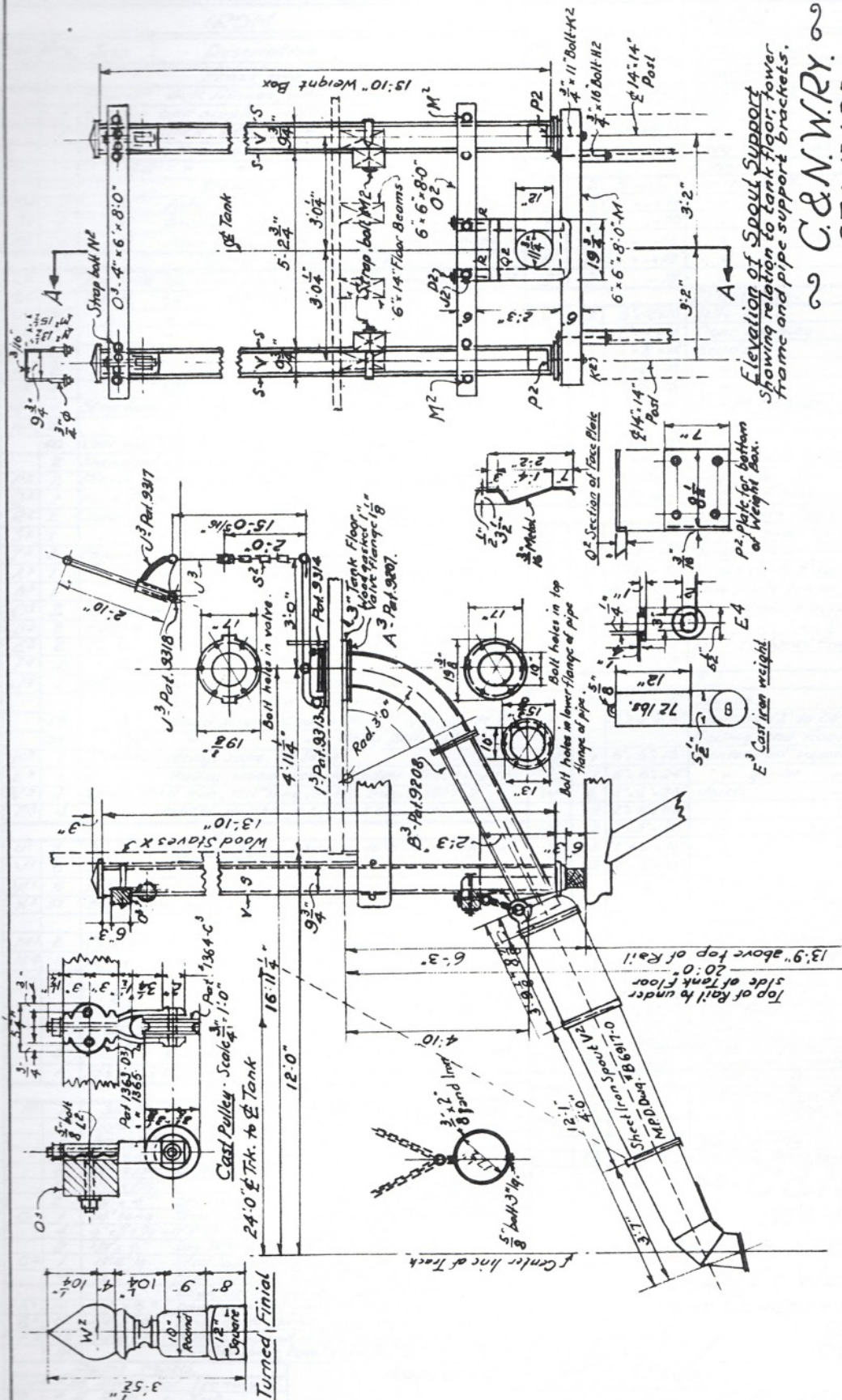
And can be found in, plus more

C&NW Standards Book
1998









Section of Spout, Spout Support, Discharge Valve, Etc.
Taken on A-A, to show relation to Tank, Center line
of Track, and Top of Rail.

Elevation of Spout Support
Showing relation to tank floor, lower
frame and pipe support brackets.

~ C & N. W. RY. ~
STANDARD

24 FT. WATER TANK.

ON 20 FT. WOOD TOWER

AND CONCRETE FOUNDATION.

Scales $\frac{1}{4}'' = 1'-0''$ Office of Chief Engineer
and as noted. Chicago, Ill. Mar. 31, 1937.

Chief Engr. C. F. 16070-51, C. W.

Approved: *C. F. 16070-51*
Chief Engr.

B&B 4

BILL OF MATERIAL

IRON				WOOD			
Mk.	No.	Size	Description	Mk.	No.	Size	Description
Frost Box				Supports			
	1	Pair 4"	Bolt Hinges, with screws.	C	16	14"x16"	Posts, S.A.S.
	1	6"	Hasp and staples, with screws.	B	2	14"x16"	Caps " " "
	1	4"	Gate Padlock, with chain.	A	3	14"x16"	" " " "
		20d	Wire nails 4 lbs.	K	8	4"x10"x28"	Sway Braces S.A.S.
		8d	" " 20 "	Floor			
Piping				D	2	6"x14"x24"	Joists S.A.S.
G ³	1	4"	Inlet pipe & elbow. Use size to fit pump.	E	2	" " " 22"	" " " "
G ³	1	4"	Overflow pipe & elbow. " " " "	F	2	" " " 20"	" " " "
H ³	1	4"	Iron body gate valve. " " " pipe.	G	3	" " " 16"	" " " (Cut 1 pc. to 8' lengths).
Spout and Supports.				H	2	" " " 10"	" " " "
D ²	2	Eye Bolts 3/4" diam. 8" shank, 2" thrd. welded to chain R ²		Z ²	2	" " " 18"	" " " "
G ²	4	Bolts 1/4" " " 18" long, for Brackets.		Frost Box.			
H ²	2	" " " " 16" " " "		U	2	3"x12"x10"	Sill, S.A.S.
I ²	4	" " " " 14" " " Brace to Wt. Box.		T	6	2"x4"x14"	Door Framing.
J ²	2	" " " " 12" " " Spout Frame		D'	2	2"x8"x18"	Studs
K ²	2	" " " " 11" " " Weight Box sill.		D'	2	2"x6"x18"	" "
L ²	4	" 5/8" " " 5 1/2" " " Pulley casting.		D'	12	2"x4"x18"	" "
M ²	4	Strap Bolts for Weight Box. See detail drawings.		O'		1"x6"x10'	D. & M. Boards 1200 BMF.
N ²	2	" " " " " " " "		P'		1"x6"x12'	" " " 500 "
	40	Cast Washers for 3/4" bolts. Pat. # 2254.		Q		1"x6"x14'	" " " 600 "
	8	Standard steel washers for 1/8" bolts L ² .		S'		1"x6"x16'	" " " & C.B. for vert. out. layer 500 "
P ²	2	Plates for Weight Boxes. See detail drawing.		Z'	1	6"x10"x3'	Door sill S.A.S.
Q ²	1	Face Plate, as per detail			3	500 Sq. Ft.	Rolls, 35# Waterproof Bldg. Paper.
R ²	2	Chain 1/2" x 14 1/2", for spout, with eye bolt D ² welded on.		Spout and Supports.			
S ²	1	" 1/2" x 24" " valve rod.		M	1	6"x6"x8'	Girt for spout frame below face plate S.A.S.
T ²	2	Chains 3/8" x 20' 0" long, for Spout.		O	2	4"x8"x12'	Brackets from posts. S.A.S.
A ³	1	10" Outlet, Pattern # 9207. See drawing.		I	1	6"x10"x10'	Brace cut to 5' lgths, lower to wt. boxes S.I.S.E.
B ³	1	10" " " " # 9208. " " "		R	1	4"x4"x6'	Face plate frame, cut to 2 pcs. S.A.S.
C ³	2	Swivel Pulleys " # 1364 " " "		S	4	2"x10"x14"	For weight box, sides S.A.S.
D ³	2	Pulley Castings " # 1363 & 1365. See dwg.		V	4	2"x8"x14"	" " " front and rear pcs. S.A.S.
E ³	2	72 lb. Weight, C.I., for spout counterbalance.		O ²	1	6"x6"x8'	Girt for Spout Frame, above Face Plate Q ² S.A.S.
F ³	1	10" Halladay Outlet Valve, Pat. # 9313, 9314.		Q ³	1	4"x6"x8'	" " " " at top of wt. brs. S.A.S.
J ³	1	Bellcrank Pat. # 9317 Fulcrum, Pat. # 9318, W.I. Levers, and Valve Rod, complete.		Tub			
	18	3" Wood screws 16 ga. for Face Pl. Q ² Buffer Pl. P ²		X	170	3"x6"x16"	Staves S.A.S.
	36	1 1/2" " " " " Strap Bolts M ² , N ² .		Y'		3"x6"x8"	Flooring 12' to 24' long. 1500 BMF
K ³	1	1" diam. Hemp rope, 31' long.		Ceiling and Roof.			
L ³	1	6" " Pulley, wood, for Halladay Valve lever.		N	1	6"x6"x16"	Center post, supporting tank ceiling S.A.S.
V ³	1	Spout, sheet iron, 12' 1" long, M.R.D. Dwg. 86917-0		L	1	6"x6"x24"	" girder " " " " "
Z ⁴	4	Addnl. Weights, C.I., spout counterbalance.		W	6	2"x6"x24"	Joists " " " " "
TUB				X	2	2"x6"x22"	" " " " " "
U'	5	1/8" diam. Wrt. Iron hoops, 3 Secs. ea. 26' 9" lg. A.R.E.A. Std.		Y	3	2"x6"x20"	" " " " " "
V'	6	1" " " " " " " " " " " "		Z	2	2"x6"x16"	" " " " " "
W'	6	1 1/8" " " " " " " " " " " "		A'	3	2"x6"x12"	" " " " " "
X'	51	Malleable Hoop Lug, See detail dwg.		N'		1"x6"	D. & M. Boards for Ceiling. 800 BMF
Ceiling and Roof				W ²	1		Turned finial from 12"x12"x3'6" per detail.
M ³	2	3/4" diam. Bolts, 15" long, 3" thrd. for Corbel.			1	1"x6"	Padlock and 12'-6" Strap Hinges for Trap Door
M ⁴	1	3/4" " Drift Bolts, 20" long, for center post.		I'	350	1"x6"	Girt and Fillers, inside of tanks, under joists.
U ⁴	1	R. Sash Chain, 24" long, for Trap Door.		F'	21	2"x4"x14"	Batters S.A.S. Cut to suit.
		8d Wire Nails 45 lbs.		E'	21	2"x4"x20"	Roof Girts " " " " "
		10d " " 35 "		G'	11	2"x4"x12"	Look outs " " " " "
		20d " " 20 "		U	1	2"x8"x12"	Trap Door " " " " "
	4	C.I. Washers, Pat. # 2254, for 1/4" g bolts, M ³ .		U'	3	1"x4"x14"	Hangers " " " " "
	1	1 1/2" x 3' 0" Iron strap, for tying overflow to center post.		M'		1" Common Bds. 10' lengths S.I.S.	1000 BMF
General.				T'	10	Squares	Approved prepared roofing, 35# 90° per sq.
B'	1	36' 0" Steel Ladder 18" wide 3/8" x 2" Sides 5/8" Rungs.		Indicator Board.			
	2	Hand holds 3/8" x 2" Sides, attach ladder to roof.		K	1		Indicator Board, complete, painted.
	2	Braces 2" x 2" x 1/4" Ls as per detail.		K'	1		" " Float, per plan.
	2	1/2" x 4" Lag Screws, fastening hd holes to roof.			1		" " Cast Iron.
	4	1/2" x 1/4" Bolts, Thrd 1" " " " " " " "			2		Sash pulleys.
	2	1/2" x 1/4" " " " " " " " " " "			20	Lin. ft.	No. 30 B Brass Sash Chain.
	2	3/8" x 4" Lag screws " braces to 6"x14" floor joists.		~ C. & N. W. RY. ~			
C'	1	14' long Steel ladder 12" wide 3/8" x 1 1/4" Sides 3/4" Rungs.		STANDARD			
	4	4"x3"x1/2" x 0' 3" Ls, riveted to roof ladder C'		24 FT. WATER TANK			
	8	3/8" x 4" Lag Screws, fastening ladder to roof.		ON 20 FT. WOOD TOWER			
C ²	1	15' 6" lg. Steel ladder, 12" wide 3/8" x 1 1/4" Sides, inside Tanks.		AND CONCRETE FOUNDATION.			
	4	1/2" x 3" Bolts, Thrd. 1 1/2", fastening ladder to ceiling joists.		Office of Chief Engineer			
	4	Wood screws 16 ga. 2" lg. fastening ladder to floor.		Chicago, Ill. Mar. 31, 1937.			
A ²	16	3/4" x 6" DOWELS, bot. of posts to top of concrete.		Dr. J. N. A. H.			
B ²	18	3/4" x 20" Drift Bolts, bot. top of posts and caps.		Chk. : L. C. W.			
F ²	32	3/4" x 21" Bolts Sq. hd and nut 2 1/2" Thrd., Sex. tra. to posts		Approved: <i>C. E. Nihil</i>			
	64	Cast Washers, Pat. # 2254 for 3/4" x 2 1/2" Bolts.		Chief Engr. C. E. 16070 ~ Sheet 5.			
Paint Mails.				B. & B.			
		1 gal. # 26 Black for Ironwork.					
		10 " # 8 Red " Tub.					
		4 " # 13 Drab " Cornice Trim.					

Note: These items are included in Tank, complete, as ordered by the Purchasing Agent.

for Roof for outside Tank

Supersedes Drg. C.E. 9532



DME 01-12-12 Milwaukee WI southbound passing by Maple St

Photo by Kevin Domrois



WSOR 01-08-12 Janesville WI inside Wisconsin & Southern Roundhouse

Photo by Kevin Domrois